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THE FRESH-WATER LAMPREYS OF THE EASTERN UNITED STATES.

In the lakes and streams of the United States East of the Rocky Mountains, five species of Lamprey are known to occur, beside the Sea Lamprey (*Petromyzon marinus L.*), which enters the streams to spawn. These should apparently bear the names indicated below.

1. PETROMYZON DORSATUS Wilder, *Lake Lamprey.*

A dwarfed derivative of the Sea Lamprey, abundantly land-locked in Cayuga Lake. It is very fully described by Gage in the Wilder Quarter Century Book, 1893, 420, as *Petromyzon dorsatus Wilder.* DeKay's *Ammocoetes unicolor* from Lake Champlain may be the larva of the same form. As this is by no means certain, it is better to adopt an unquestioned name. *P. dorsatus* is probably to be regarded as a subspecies rather than as a distinct species.

2. ICHTHYOMYZON CONCOLOR (Kirtland) *Silver Lamprey.*

This small Lamprey is rather common northward in the Mississippi Valley and in the Great Lake region. It has the narrow, divided median tooth of *Petromyzon,* but the dorsal is continuous. The oldest name, *Petromyzon argenteus* Kirtland (1840), is

preoccupied in Europe. The oldest name certainly belonging to this species is *Petromyzon bdellium* Jordan (1885), a substitute for the preoccupied *argenteus*. Kirtland's *Ammocoetes concolor* (1840) and Agassiz's *Ammocoetes borealis* are based on larvae, the former identifiable only through its coloration which is that of the adult, whitish with a row of bluish dots along the side.

3. ICHTHYOMYZON CASTANEUS (Girard). *Chestnut Lamprey.*

This little known species is distinguished from the last by the tricusped upper tooth, and the greater number of teeth in the plate below. It is recorded from Minnesota, Arkansas, Manitoba, Kansas and Louisiana.

4. LAMPETRA AEPYPTERA (Abbott). *Western Brook Lamprey.*

This small lamprey, reaching a length of 6 to 10 inches, is very abundant in most parts of the Mississippi Valley, ascending little brooks to spawn. The genus is known by the development of the upper tooth as a crescent shaped plate with a blunt cusp at either end instead of the distinct sharp upper teeth seen in *Petromyzon* and *Ichthyomyzon*. There are no distinct sharp lateral teeth, indeed no sharp teeth anywhere. From *L. wilderi*, *L. aepyptera* is distinguished by having only 53 to 56 muscular bands between the last gill opening and the vent, instead of 66 to 71 as in the latter species. Our specimens are from Griffith's Creek, Bloomington, Indiana and Big Prairie Creek, Monroe, Wisconsin. Fowler records the species from the Ohio River (type of *Ammocoetes aepyptera*), Grosse Ile and Ann Arbor, Michigan, Cedar Rapids, Iowa, and Broad River, Louisiana.

The oldest name of this lamprey is *Petromyzon niger* Rafinesque, (*Ichthyologia Ohiensis*, 1820).

But there was already a *Petromyzon niger* Lacepede in Europe, also a *Lampetra.*

The only remaining synonym is *Ammocoetes aepyptera* Abbott, Proc. Ac. Nat. Sci. Phil., 1860, 327, given to a young specimen from the Ohio River, with immature dentition. This has been well figured by Mr. Fowler (Proc. Ac. Nat. Sci. Phil., 1907, 465), who has very properly revived for it Abbott's specific name (misprinted *aepytera* by Jordan and Evermann, and by Fowler).

5. *LAMPETRA WILDERI* (*Gage*), *Eastern Brook Lamprey.*

This species is very close to the preceding, differing, so far as noticed, almost entirely in the presence of 69 (67 to 71) muscular bands between the last gill-opening and the vent. In two transforming examples, Dr. Gage (in lit.) counts on the right side 69 bands, on the left 70. In three females, 69 to 71, in three breeding males, 70 to 71. It is abundant in most brooks of New York and northern New Jersey, extremely so about Cayuga Lake. Mr. Nichols (in lit.) records four specimens from the Hudson River about New York. These have 67 muscular bands. On three examples from Ramsey, New Jersey, Mr. Nichols counts 68 bands. The general range of the species has not been ascertained. It reaches a length of 6 to 10 inches. It has been very fully described as *Ammocoetes branchialis,* by Dr. Gage in the Wilder Quarter-Century Book, 1896, p. 493. In Jordan & Evermann's "Fishes of North and Middle America," the name *Lampetra wilderi* is accepted from Gage.

This name *wilderi* will stand, unless antedated by *Petromyzon appendix* De Kay (New York Fauna, Fishes, 1842, 342) from the Hudson River and from Providence.

DeKay's type was a small black lamprey, with the anal tube conspicuous, as in *L. wilderi.* But the teeth are described as follows: "A ring of irregularly

shaped corneous processes within the oral orifice and a large isolated double tooth of the same texture on the inferior portion of the mouth." This I cannot reconcile with the dentition of *Lampetra*. The small lampreys of the North Atlantic region need much further study, and the relation of *Petromyzon nigricans* Le Sueur to the sea lamprey should be determined.

DAVID STARR JORDAN,
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A NEW RECORD FOR RANA SEPTENTRIONALIS, BAIRD.

In COPEIA, No. 16, Mar. 15, 1916, I published a few notes on this species, which I recently had a chance to study in its native habitat.

On Aug. 8-9, 1917, I found it abundant at Tim Pond, Eustis, Franklin Co., Me. It occurred all around the pond; along rocky, wave-beaten shores, in marshes, and in the outlet stream close to the lake, but never far from the water. The tadpoles were transforming in the marsh at the north end of the pond and I collected many young frogs in pools along a buckboard road which skirted the marsh. Most of the tadpoles had completed their change before this date, but I collected a single one with large hind legs, measuring 1 15-16 inches including the tail. Most of the frogs found had evidently completed their change this summer and some retained the stump of a tail. They averaged 1¾ inches long, snout to vent. The adults, of which I collected four, were nearly twice this size, 2 15-16 inches.

I also heard the call of these frogs and find that Mr. A. H. Nortons' description, quoted in the paper mentioned above, fits it admirably. While keeping some of these frogs in camp in a tin can I heard them give a slightly different call suggesting the bubbling note of *Rana pipiens*, but shriller and not quite so loud.

Rana clamitans was found in the same situation, but was not nearly so abundant as *R. septentrionalis*, while *R. catesbeiana* was conspicuous by its absence.

This record from Tim Pond extends the known range of the species in Maine considerably to the south and west.

I collected 27 specimens in all, which have been divided between the American Museum, the Boston Museum of Natural History, the Maine State Museum, the Lee Museum of Biology at Bowdoin College and my private collection, which is at present loaned to the Lee Museum of Biology.

PHILIP H. POPE,
Manchester, Maine.

A SNAKE ITEM.

Years ago, in the nineties I think, I knew some boys who kept a few live snakes for their own satisfaction. Among them was a good sized garter snake (*Thamnophis sirtalis*), which gave birth to living young while in their possession. They also had a good sized snake whose specific identity does not remain at this late date quite clear to me, but I think it was a black snake (*Coluber constrictor*), if not, it must have been a king (*Lampropeltis getulus*).

One day when I was passing by, they called me to see the last mentioned snake eat the young garter snakes, but when the said little snakes were swallowed by the big snake, they came speedily running out of his mouth again. The large snake did not constrict and kill the small snakes, but simply grabbed them and swallowed them, and as soon as they got past his teeth, their girth was not sufficient to enable the large snake's muscles to force them any further. Whether this has any bearing on the idea that viviparous snakes swallow their young for protection, I do not know.

C. S. BRIMLEY,
Raleigh, N. C.

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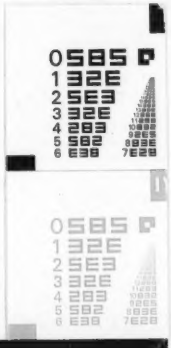
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